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**A NEXAFS Study of Mixed Self-Assembled Monolayers of Methyl- and Hydroxyl-terminated Short Chain Alkanephosphates Adsorbed on Titanium Oxide**

M. Zwahlen (U. College London, UK and ETH Zurich, Switzerland), S. Tosatti (ETH Zurich), and G. Haehner (U. College London, UK)

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We have studied self-assembled monolayers of methyl- and hydroxyl-terminated short chain alkanephosphates adsorbed on titanium oxide substrates. The films were prepared from aqueous solutions of the corresponding ammonium salts.

Metal oxides are increasingly becoming a field of interest because of their widespread applications, in particular because of their use in the biosensing area and their biocompatibility. In connection with bio-related applications, organic solvents are unfavorable, since they may reduce the biocompatibility of a surface by trapped solvent molecules. Aqueous solutions are also preferably employed on an industrial scale due to environmental pollution issues.

Mixed films of methyl- and hydroxyl-terminated alkanephosphates allow surface properties such as wettability, polarity or surface charges to be tailored. Such tailoring may prove to be of utmost importance for controlling the interaction between the SAM-modified surface and biological systems such as proteins and cells.

The NEXAFS measurements revealed that the methyl-terminated molecules establish well-organized films similarly to a thiol-gold system. Hydroxyl-terminated and mixed films, however, showed much less orientation than corresponding thiols adsorbed on gold.

For future applications the quality of the mixed films must be further improved.